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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,204	01/16/2004	Hideki Higashitani	2004-0068	4883

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,204

Applicant(s)

HIGASHITANI, HIDEKI

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-52 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 20,21,23-27,29,34,35,37-42,44-47 and 49-52 is/are rejected.
7) ☒ Claim(s) 28, 30-33 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/420,876.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07-12-2004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

In view of the amendment filed on Oct. 27th 2004, the pending claims are unpatentable as following:

Claim Objections

1. Claims 42-45 are objected to because of the following informalities: they are depended upon claim 40, which is a dependent claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for "the second rough surface".

Claim Rejections - 35 USC § 102

2. Claims 20-21, 23-27, 34-35, 37-42, 44-47 and 49-52 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hagashi (US 6359235).

Hayashi discloses an electronic device mounting wiring board and a method of making such.

The wiring board is made by the steps of drilling via holes (2) in an insulation sheet (1), wherein the insulation sheet is not cured (or is in B-stage) (col 5 L 23-25 & col 4 L 58-59). The via holes (2) are filled with an electrically conductive paste.

A transfer film (5) (or carrier) having a wiring layer (4) formed on the surface of the transfer film (5), is contact bonded onto the insulation sheet (1) with press, thereby

transferring the wiring layer (4) onto the surface of the insulation sheet (1) (col 5 L 35-38). Then removing the transfer film (5) (Fig. 1E).

Hayashi emphasizes that the single layer wiring sheet ie. after the wiring layer (4) has formed onto the insulation layer (1), remains in B-stage (or uncured) (col 5 L 53-58).

In another aspect of Hayashi's invention, a cavity (6) is formed for housing a electrical device. The cavity is formed in the insulation layers (1), such that a wafer with conductive posts (14), is placed within. A soft resin (15 or 16) is used to filled around the wafer in the cavity (col 8 L 23-30 & L 5-10, & col 9 L 30-35).

A laminate can be formed by stacking a plurality of single layer wiring sheet and the insulation layers with the electrical device embedded.

Finally, a wiring circuit layer (21) is formed on the surface of the transfer film (20) is press bonded onto the front and back surface of the laminate (col 9 L 36-43 & Fig. 6D).

The transfer film (20) is then removed. A final curing step is performed onto the laminate (col 9 L 40-47).

Hayashi teaches the steps of making a multilayer wiring board having an electrical device embedded. The prior art steps anticipate what is claimed by the applicant. The examiner takes the position that the transfer film (5) has a degree roughness which includes concavities and convexities microscopically.

Allowable Subject Matter

3. Claims 28 and dependents would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph.

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4. Claims 22, 36, 43, and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if incorporate into their respective independent claims.

Response to Arguments

5. Applicant's arguments filed on October 27, 2004 have been fully considered but they are not persuasive. Applicant traverses the art rejections and raises the following issues:

- A. Hayashi does not teach forming a first rough surface having concavities.
- B. Hayashi does not disclose a portion of the wiring is located within the concavities, nor that a second rough surface is formed onto the receiving surface of a substrate.

In respond to the above issues:

A & B. Hayashi discloses the process of which is identical to the present invention. The examiner takes the position that it would be inherent that the wiring pattern receiving substrate (1) takes the shape of the transfer surface of the transfer film (5), because the receiving substrate (1) is an uncured (or a b-stage) layer.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cathy Lam
Primary Examiner
Art Unit 1775